(o) Welding, when employed, shall be performed by welders certified by the U. S. Coast Guard, American Bureau of Shipping, or U.S. Navy Department, and the electrodes used shall be of an approved type.

(p) Inspection openings shall be provided in the winch housing or the housing itself shall be so arranged as to permit examination of the internal working parts.

(q) Motor clutches, when used, shall be of either frictional or positive engaging type. When one motor is used for two winches, the clutch shall be so arranged that only one winch shall be engaged at any one time. The clutch operating lever shall be capable of remaining in any position when subject to vibration and shall be so arranged that when in neutral position, both lifeboats may be lowered simultaneously.

[CGFR 49–18, 14 FR 5111, Aug. 17, 1949, as amended by CGFR 51–20, 16 FR 5443, June 8, 1951; CGFR 58–31, 23 FR 6883, Sept. 6, 1958; CGFR 65–9, 30 FR 11465, Sept. 8, 1965; CGD 72–133R, 37 FR 17039, Aug. 24, 1972; CGD 73–103R, 39 FR 11273, Mar. 27, 1974]

§ 160.015–4 Capacity of lifeboat winches.

(a) A lifeboat winch shall be approved for a working load after it has been demonstrated by detailed calculations that this working load can be carried with a minimum factor of safety of six based on the ultimate strengths of the materials. It will also be necessary to conduct the tests specified in § 160.015–5.

(b) [Reserved]

[CGFR 49–18, 14 FR 5111, Aug. 17, 1949]

§ 160.015–5 Inspection and testing of lifeboat winches.

(a) *Material testing.* (1) The manufacturer shall furnish affidavits relative to the physical and chemical properties of the materials. Such affidavits shall be furnished by the foundry or mill supplying the material.

(b) *Factory test for initial approval.* (1) Lifeboat winches shall be tested for strength and operation at a place chosen by the manufacturer of the winch in the presence of an inspector. The lifeboat winch under test shall be set up similar to the intended shipboard installation. In the case of a lifeboat winch with nongrooved drums, the drums shall be built up or sufficiently filled with wire to simulate the maximum number of wraps for which the winch is to be approved. The tests to be conducted are as noted in paragraphs (b)(2) to (8) of this section. The limiting values of velocities and the 2 foot braking distance set forth in the following paragraphs of this section are the values to be actually achieved with the specific arrangement of falls contemplated for the shipboard installation. If a different arrangement of falls is used to facilitate testing, due consideration shall be given to the use of limiting velocities, braking distances, and test weights which will be equivalent to the test performed with an arrangement of falls identical to that used for the shipboard installation.

(2) A pull of 2.2 times the working load, equally divided between drums, shall be applied in a direction similar to a shipboard installation. The test weight producing this load shall be dropped through a distance of not less than 15 feet, at which time this weight shall be stopped within a distance of 2 feet by action of the counterweight alone on the hand brake.

(3) A test identical to that noted in paragraph (b)(2) of this section shall be conducted after the braking surfaces have been thoroughly wetted. The test weight shall be stopped by the action of the counterweight alone within a distance of 6 feet. The test need only be applied to lifeboat winches having external brakes.

(4) With a pull equal to the working load, it shall be determined that the governor brake will limit the speed of lowering of the test weight to a maximum of 120 feet per minute, except that, in the case of winches designed for use with emergency lifeboats aboard passenger vessels, the speed of lowering shall not exceed 160 feet per minute.

(5) With a pull equal to 0.3 times the working load, it shall be determined that the winch will lower the test weight at not less than 40 feet per minute, except that, in the case of

winches designed for use with emergency lifeboats aboard passenger vessels, the speed of lowering shall not be less than 60 feet per minute.

(6) With a pull equal to the working load, the test weight shall be lowered and raised a sufficient number of times so that the combined lowering distance is not less than 500 feet. This test is to determine the efficiency of the lifeboat winch for prolonged service.

(7) With a pull equal to 0.5 times the working load, it shall be demonstrated that the lifeboat winch can be hand operated by hoisting the test weight without undue effort. For gravity davits, it shall be demonstrated that this test weight can be carried easily from a point at which the traveling blocks of the falls are 1 foot below their outboard, two-blocked position, and then up and around the bend of the trackways to the stowed position of the lifeboat.

(8) Where a quick return mechanism is installed it shall be demonstrated that a weight equal to 2.2 times the weight of the empty blocks can be handily retrieved through the regular reeving of the falls at a rate of not less than 40 feet per minute at the drum by one man.

(9) The following test applies to a lifeboat winch used for hoisting an emergency lifeboat of a passenger vessel. With a weight equal to the weight of the emergency lifeboat and its full complement of persons and equipment, it shall be demonstrated that the weight can be hoisted through the regular reeving of the falls at a rate of not less than 20 feet per minute, to the embarkation position.

(10) After the tests noted in paragraphs (b)(2) to (9) of this section have been conducted, the winch shall be completely disassembled and the marine inspector shall ascertain that no undue stress or wear has been incurred.

(c) *Factory testing after approval.* (1) After a design of a lifeboat winch has been approved, subsequent winches of the same design shall be individually tested as described in paragraph (c)(2) of this section.

(2) Each lifeboat winch shall be set up in a manner similar to that described in paragraph (c)(1) of this section. With a pull equal to 1.1 times the working load, the test weight shall be dropped through a distance of not less than 15 feet, at which time the load shall be stopped by the action of the counterweight alone. This test is to demonstrate the operation of the winch, and if satisfactory, no further test need be required. However, if the inspector is not satisfied with the operation of the winch, a complete test as noted in paragraph (b) of this section may be required.

(d) *Name plate.* (1) A corrosion resistant name plate shall be affixed to each lifeboat winch on which shall be stamped the name of the manufacturer, approval number, maximum working load in pounds pull at the drums, maximum working load in pounds pull per fall type and serial number, together with the Marine Inspection Office identification letters, the date, and the letters U.S.C.G.

[CGFR 49–18, 14 FR 5112, Aug. 17, 1949, as amended by CGFR 58–31, 23 FR 6883, Sept. 6, 1958; CGFR 65–9, 30 FR 11465, Sept. 8, 1965; CGD 72–133R, 37 FR 17039, Aug. 24, 1972; CGD 75–186, 41 FR 10437, Mar. 11, 1976]

§ 160.015–6 Procedure for approval of lifeboat winches.

(a) Before action is taken on any design of lifeboat winch, detail plans covering fully the arrangement and construction of the lifeboat winch, a complete bill of material setting forth the physical properties of the materials used, and strength calculations, shall be submitted to the Commandant through the Commander of the Coast Guard District having jurisdiction over the construction of the lifeboat winch.

(b) If the drawings required in paragraph (a) of this section are satisfactory, the Commander of the Coast Guard District in which the lifeboat winch is to be built, shall be notified in writing when fabrication is to commence. An inspector will be assigned to supervise the construction in accordance with the plans and upon completion, conduct the tests required by § 160.015–5.

(c) At the time that the tests are successfully completed, the manufacturer shall present to the inspector four corrected copies of the plans noted in paragraph (a) of this section, including any corrections, changes, or additions